Test Synopsis

CEC F-23-A-01
Procedure for Diesel Engine Injector Nozzle Coking Test

Purpose
To evaluate the injector nozzle coking propensity of diesel fuels in an XUD9 indirect injection diesel engine

Status
The test has achieved very good precision ('A'-Status) and is currently used throughout the industry in several labs.

The next test procedure review date is 10th September 2003

Recent data has indicated that significant ambient pressure changes can influence the test outcome, and so investigations on how to control the intake ambient pressure are on-going. It is likely that such ambient intake pressure control will become mandatory in future.

Description
A PSA XUD(A/L, 4 cylinder, indirect injection diesel engine of 1.9 litre capacity is used in this test. The injector nozzles used contain 'unflatted' needles. The engine is operated at light load/speed, cyclic conditions for a period of 10 hours. The propensity of the fuel to provoke deposit formation in the nozzles is determined by measuring the injector nozzle air flow before and after the test operation. The results are expressed in terms of the percentage airflow reduction at needle lift values of 0.1, 0.2 and 0.3 mm needle-lift for all 4 nozzles. The performance criteria is a single value of the average percentage air-flow reduction at 0.1 mm lift of all 4 nozzles.

Application
The test is included in the World Wide Fuels Charter, in which the acceptance criteria for passenger car diesel fuel is a maximum flow loss of 85 % at 0.1 needle-lift.

CEC Current Publications

Cont nts:

CEC Code Number	Description	Issue Number	Release Date	Available Format	Price in Euro
LUBRICANTS (L)					
CEC L-02-A-78	Oil Oxidation and Bearing Corrosion Engine Test (Petter W1 Single Cylinder Gasoline Edition)	1 2nd Edition	24Dec98	* Paper	345
CEC L-07-A-95	Load Carrying Capacity Test for Transmission Lubricants (FZG Test Rig)	4	16Sep02	Paper	260
CEC L-11-A-98	The Coefficient of Friction of Automatic Transmission Fluids (DKA Friction Machine) ('A' Status granted for m 3 and m qst only)	4	06Jul99	Paper	345
CEC L-14-A-93	Evaluation of the Mechanical Shear Stability of Lubricating Oils Containing Polymers (Fuel Injection Pump) (Replaces CEC L-14-A-88)	3	19Apr96	Paper	260
CEC L-36-A-90	The Measurement of Lubricants Dynamic Viscosity under Conditions of High Shear (Ravenfield Viscometer)	2 2nd Edition	08Dec00	Paper	260
CEC L-38-A-94	Gasoline Engine Valve Train Scuffing Test (PSA TU3 Engine)	5.2	22Nov02	Electronic	260
CEC L-39-T-96	The Evaluation of Oil-Elastomer Compatibility (Laboratory Test)	4	29Jan01	Paper	260
CEC L-40-93	Evaporation Loss of Lubricating Oils (NOACK Evaporative Tester)	9	29Nov02	Electronic	260

abstract available. ferred to ASTM 5278-02